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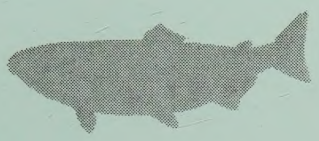
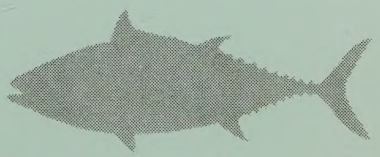


THE JAPANESE SABLEFISH MARKET

by

Charlotte L. Miller



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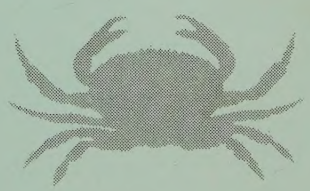

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The Japanese Sablefish Market

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June 1986

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Table of Contents

		Page
I.	Introduction	1
II.	The Japanese Market	1
	A. Consumption	1
	B. Market Size	1
	C. Suppliers	4
	D. Distribution Channels	6
	E. Price Determination	7
	1. Wholesale Prices	7
	2. West Coast Exvessel Prices	11
	3. Grading Standards	13
III.	Conclusion	15
	Literature Cited	17
	References	19

List of Tables

Page

1. Production of the Japanese sablefish fleet by area for 1970-84 2

2. Sablefish landings and exvessel values for Alaska Canada and the west coast for 1981-85 4

3. West coast exvessel prices by gear type and by state for 1981-85 12

List of Figures

1. Tokyo Central Wholesale Market prices for large imported (origin Canada and Alaska) sablefish and Japanese mothership-processed chum salmon for January 1983 through April 1986 8

2. Tokyo Central Wholesale Market prices for small imported (origin Canada and Alaska) sablefish and Japanese mothership-processed chum salmon for January 1983 through April 1986 9

I. Introduction

The economic importance of the west coast sablefish (*Anoplopoma fimbria*) resource has increased significantly in recent years. This species now ranks as one of the most important species in the groundfish fishery and is the primary groundfish export for west coast distributors (Korson, 1985).

The principal export market for U.S.-produced sablefish is Japan. Until recently, the Japanese market was supplied primarily by Japanese longline vessels operating in the Gulf of Alaska and the eastern Bering Sea. However, with the creation of the U.S. 200-mile fishery conservation zone and expansion of the American fishery for sablefish off Alaska, Japanese production declined as quotas were reduced. As a result, the Japanese demand has been supplied increasingly by imports.

The shift in Japanese market supply to imports clearly is a market opportunity for west coast producers. Understanding the market is essential for taking advantage of this opportunity. Market size, quality standards, and price determination are particularly important. Because information on the Japanese market is scattered among a variety of sources and is not always easily accessible to those interested, this paper seeks to bring together such information and to point out gaps which can only be filled by further research.

II. The Japanese Market

A. Consumption

Sablefish is consumed primarily during the winter months when the Japanese prefer to eat oilier fish. Peak consumption occurs from late fall to about April (B. Atkinson, pers. comm.). Sablefish is used in stews and chowders which are popular dishes during the wintertime, and is often substituted for salmon in these dishes when salmon prices are high (S. Sonu, pers. comm.; Wilson, 1984). It is also consumed in marinated form. An important market for the lower grades of fish is the lunch box or "Bento" market (Wilson, 1984).

B. Market Size

The Japanese sablefish fishery extended from Canada, through the Gulf of Alaska and the Aleutian Island chain, to the northeastern Pacific off the Soviet Union and northern Japan. Japanese vessels began fishing in the eastern Bering Sea in 1958 and in the Gulf of Alaska in 1963 (Narita, 1985; Stauffer, 1985). The Japanese fishery off the Canadian coast began in 1966 (McFarlane and Beamish, 1983). Most of the Japanese fleet came to be concentrated off Alaska in the eastern Bering Sea and the Gulf of Alaska.

Table 1 presents production data for the Japanese sablefish fishery for the period 1970 through 1984. It does not include Japanese production off the west coast because statistics show that only trace amounts were caught in this area (PFMC, 1982). The table includes the period when the fishery was in full production, without foreign regulation, the transition period of increasing restrictions, and ends with the last year of the directed fishery in Alaskan waters. Thus, the data gives clues to the historical size of the Japanese market for sablefish and the decreasing ability of the Japanese fishery to supply demand. However, without knowing what quantity went into cold storage, or how much sablefish may have been exported or imported, it is not possible to determine the level of consumer demand in any given year.

Table 1. Production of the Japanese sablefish fleet by area for 1970-84.

	Northwestern Pacific	Eastern Bering Sea and Aleutians	Gulf of Alaska	Canada	Total
	metric tons				
1970	3,100	10,904	24,497	5,142	43,643
1971	4,600	14,981	25,228	3,050	47,859
1972	4,600	16,538	35,558	4,236	60,932
1973	3,800	9,270	27,264	2,950	43,284
1974	2,831	7,587	24,176	3,866	38,460
1975	2,265	4,922	22,072	4,702	33,961
1976	1,828	4,840	21,924	3,494	32,086
1977	1,355	4,497	14,350	2,961	23,163
1978	531	1,805	6,458	2,103	10,897
1979	307	1,688	5,919	1,112	9,026
1980	177	1,882	4,832	199	7,090
1981	248	2,411	6,910	0	9,569
1982	225	3,030	4,921	0	8,176
1983	224	2,757	4,334	0	7,316
1984	175	1,723	844	0	2,742

Sources: Northwestern Pacific data from the Food and Agricultural Organization of the United Nations
Eastern Bering Sea, 1970-76 data from Narita, 1985; 1977-84 data from Berger, et. al., 1985
Gulf of Alaska, 1970-76 data from Stauffer, 1985; 1977-84 data from Berger, Smoker, and King, 1986
Canada, 1970-81 data from McFarlane and Beamish, 1983; 1982-84 data from Canadian Dept. of Oceans and Fisheries

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The peak year of Japanese sablefish production was 1972. In that year, 60,932 mt of sablefish were harvested. After that, Japanese production steadily declined in all areas largely due to declining stock abundance. Conservation measures were adopted with Japan agreeing to limit its 1975 and 1976 annual catches to 30,000 mt in the northeastern Pacific and 1,200 mt in the Bering Sea/Aleutian Islands area although, in the latter area, production exceeded the 1,200 mt limit (U.S. Dept. of State, 1974). Beginning in 1977, restrictions in catch allocations by Canada and the United States resulted in further declines in Japanese production. In Canadian waters, the Japanese allocation went from 3,000 mt in 1977 to 200 mt in 1980. Directed foreign fishing was halted after 1980 (McFarlane and Beamish, 1983). The Japanese sablefish quota in the Gulf of Alaska was reduced from a level of 13,900 mt in 1977 to only 1,513 mt in 1984. During this same period, the quota in the Bering Sea was reduced from 5,600 mt to 2,168 mt (Berger et al., 1986). In 1985, the Japanese directed fishery for sablefish was eliminated from waters off Alaska since the domestic fishery was capable of taking the total allowable catch of this species.

There is very little information available on the Japanese sablefish fishery in the northwestern Pacific. Statistics prepared by the Food and Agricultural Organization of the United Nations indicate that production in this area has steadily declined since 1972 to a relatively insignificant amount. Beginning in 1986, the Japanese no longer have a sablefish allocation in Soviet waters (FFIR, 1986).

When Japanese production dropped sharply in 1977, due to restrictions imposed by the U.S. and Canada, the Japanese turned to foreign sources. One report in 1979 estimated demand in Japan to be in the range of 40,000-50,000 mt or approximately 30,400 to 41,000 mt above the level of domestic production in that year (FFIR, 1979). How much sablefish was imported into Japan in any given year is difficult to determine, however. Official figures are not available because this species is classified with "other fish" in Japanese import statistics. U.S. statistics are unreliable because sablefish may at times be classified under other species of fish, for example butterfish, or under unspecified fish. Recently, import figures compiled from surveys of the major importers have become available in Japanese trade newspapers. However, these statistics may not be complete or fully accurate because reporting is not mandatory and all imports may not be counted (S. Sonu, pers. comm.). Based upon these reports, which are discussed below, the supply of sablefish to the Japanese market in round weight, including domestic production and imports, is estimated to have been between 12,100 and 17,200 mt in 1983, approximately 14,850 mt in 1984, and about 17,000 mt in 1985 (Suisan Keizai Shimbun, 1985, 1986).

C. Suppliers

Although Alaska and the west coast of the U.S. are the largest producers of sablefish (Table 2), Canada and Alaska are the leading suppliers of the Japanese market (S. Tobata, B. Atkinson, pers. comms.). The Canadian fishery caters exclusively to the Japanese market. Canadian fishermen have developed a highly successful market in Japan by working closely with Japanese technicians and adopting rigid Japanese quality standards (Anon., 1984). Many Alaskan fishermen are also adopting Japanese standards (B. Atkinson, pers. comm.). These factors largely account for the higher values of Canadian and Alaskan production as compared to the west coast. Calculating average exvessel prices for 1985 from Table 2, Canadian sablefish averaged $1.04/lb, Alaskan averaged $0.55/lb, and west coast sablefish averaged $0.40/lb.

Table 2. Sablefish landings and exvessel values for Alaska, Canada, and the west coast for 1981-85.

(Q=MT, V=1000$)

	Alaska		Canada		West Coast(1)	
	Q	V	Q	V	Q	V
1981	1,648	1,321	4,527	5,166	11,606	5,801
1982	2,648	2,940	3,912	5,556	18,862	11,102
1983	3,491	3,973	4,414	5,291	14,744	8,197
1984	8,293	10,622	3,852	5,649	14 427	7,519
1985	14,396	17,450	4,263	9,804	14,418	12,858

(1) Includes Puget Sound

Sources: Alaska data: Joseph Terry, NMFS, Northwest and Alaska Fisheries Center
Canadian data: Canadian Dept. of Oceans and Fisheries
West coast data: PacFIN Data Base

As stated previously, import figures which are published for sablefish are probably not completely accurate. At best, they provide an index of the flow of imported product to the market. Based upon reports which were available, there has been an

apparent 200-250 percent increase in the amount of dressed sablefish imported by Japan from 1983-85.

According to a report in the Japanese newspaper Suisan Keizai Shimbun (1985), Japan imported 1,995 mt of dressed Alaskan sablefish (2,793 mt round weight)[1] and 1,495 to 1,995 mt of west coast sablefish (1,993-2,659 mt round weight) in 1983. This represented 74 percent of total Alaskan sablefish production and 14 to 18 percent of west coast landings. Imports of Canadian fish were not designated. Adding in Japanese production of 7,316 mt (from Table 1), the total supply of sablefish (round weight) to the Japanese market in 1983 is estimated to have been between 12,100 mt, not accounting for Canadian imports, and 17,200 mt, assuming all Canadian production (4,414 mt) went to Japan.

According to the same report, in 1984, Japan imported 8,647 mt of dressed sablefish (12,106 mt in round weight). Imports of Alaskan dressed sablefish increased to 3,990 mt (5,586 mt round weight) and imports of west coast-produced sablefish rose to between 2,495 and 2,995 mt (3,326- 3,983 mt round weight). These amounts represented 68 percent of Alaska sablefish landings and 23 to 28 percent of west coast production. By substraction, Canadian imports totaled between 1,662 and 2,162 mt of dressed product (2,327-3,026 mt round weight) which represented 58 to 76 percent of Canadian production in that year. These figures seem low based upon the fact that Canada is known to be a larger supplier to the Japanese market than the west coast. It is speculated that not all imports from Canada were accounted for in these statistics. Adding Japanese production of 2,742 mt (from Table 1), total supply to the market is estimated to have been approximately 14,848 mt in round weight.

Statistics compiled for 1985 show that 12,100 mt of dressed sablefish (16,940 mt round weight) were imported into Japan by 69 companies (Suisan Keizai Shimbun, 1986). This represents approximately 52 percent of total U.S. and Canadian production for that year. In 1986, Japanese importers expect a supply of around 18,000 mt of dressed product to be available to the Japanese market (Suisan Keizai Shimbun, 1986). This translates to roughly 25,200 mt of round weight fish which represents about 65 percent of the total domestic allocations for the Alaskan, Canadian, and west coast fisheries. In addition, at the beginning of 1986 there were 2,000 mt of sablefish still in inventory. Thus, the total supply to the market in 1986 is

[1] Conversion factors used in calculating round weight figures are 0.600 pound dressed weight per one pound round weight for Alaskan and Canadian fish which are predominantly Japanese (eastern) dressed and 0.667 pound dressed weight per one pound round weight for west coast sablefish which is predominantly western dressed. If origin of fish is not designated, the 0.600 conversion factor is used. (Norris, 1984).

estimated to be around 28,000 mt in round weight.

Japanese trading companies typically start buying operations in the Bering Sea and Aleutian Islands area in about February when the fishery begins. In the Gulf of Alaska and Canada, where the fisheries start later, buying usually begins in March or April and continues through summer and into fall until quotas are reached and the fisheries close (B. Atkinson, pers. comm.). However, it appears that these patterns are changing because U.S. vessels off Alaska are beginning to fish as early as January and quotas are being reached much sooner. This year, quotas were reached in most of the areas of the Gulf of Alaska by June. This could significantly impact sales of west coast sablefish which, according to some sources, are not available in large quantities until middle to late summer (S. Tobata, B. Atkinson, pers. comms.)

D. Distribution Channels

Once sablefish is landed in Japan, it is sold through either of two channels, port of landing markets or direct sales. Most of the fish auctioned at the port of landing markets goes to the consumer wholesale markets. A smaller proportion is sold to small processors or representatives of supermarkets and department stores. Direct sales are made in large volumes to processors, consumer wholesale markets, or large supermarket chains. The processors then partially thaw the fish and slice it into steaks or it is processed into other products such as marinated fish. The processors then sell these products to consumer wholesale markets or to supermarkets and other retail outlets (B. Atkinson, pers. comm.) According to one buyer, a large amount of the sablefish sold directly to processors is in the smaller size categories of 2-3 or 3-4 pounds. This is because the processors require a cheap source of raw material. The larger fish, usually 5 pounds and up, are sold at the wholesale markets and to large supermarket chains which are looking for the higher valued fish.

The consumer wholesale markets are found in large metropolitan areas such as Tokyo, Yokohama, Osaka, Kyoto, Kobe, and Nagoya. The largest is in Tokyo and it is estimated that roughly 10 percent of all sablefish, most of it high quality, is sold in this market (Wilson, 1984). It is not known where the remainder of the fish is ultimately sold, but the major proportion of it probably finds its way to consumers in northern Japan. Within the Tokyo wholesale market, there are a set number of licensed broker firms which are permitted to operate. There are also a large number of licensed jobbers (middlemen) most of which have wholesale or retail shops or stalls in the market where the owners of small fish shops or restaurants and bars can buy their daily supply of fish. In addition, there are licensed buyers that represent supermarkets, department stores, processors, and groups of local fish shops throughout Tokyo

(Atkinson, 1981).

Frozen fish and processed fish products are usually sold either on consignment (auction or bid) or by direct sale to the buyer. All sales must be handled by one of the licensed brokers at a uniform commission of 5.5 percent (Atkinson, 1981).

E. Price Determination

1. Wholesale Prices

The prices for sablefish on the Japanese market can change dramatically and are subject to yearly as well as seasonal variations corresponding to peak and low demand periods. In the past, according to industry sources, the prices were largely dependent on the size of the Japanese quota and level of production by the Japanese fleet operating in waters off Alaska. Since that fishery was phased out, the Japanese market has gone through a transition in supply, from domestic production to imports, and this has had a significant impact on prices.

Figures 1 and 2 show Tokyo Central Wholesale Market (TCWM) prices for large (5-7 pounds) and small (3-4 pounds) fish for January 1983 through April 1986. This timeframe includes the market transition period beginning in 1984, when imports of sablefish began to increase significantly, through 1985 when the market became almost totally dependent upon imports. The discussion which follows is based upon price information from the Tokyo Central Wholesale Market only. Generally, sablefish and salmon prices move together in this market because the two species are close substitutes for each other (H. Beppu and K. Manto, pers. comms.). Chum salmon prices have been plotted to show this relationship. It should be restated that it is estimated that only about 10 percent of the sablefish supply is sold in the TCWM. Prices for this market and the relationship between salmon and sablefish prices may not be representative of the market as a whole. However, TCWM prices are the only prices which are available and may reflect general trends in the overall market.

The general pattern for sablefish prices is characterized by a rise in prices beginning in late fall and continuing through the winter, when consumption is at its highest, and falling prices during the summer when demand by consumers declines and shipments from Alaska and Canada are at their peak (S. Tobata, B. Atkinson, pers. comms.).

During the first part of 1983, sablefish prices remained relatively stable apparently due to a shift in demand from sablefish to salmon as salmon became cheaper. Prices for large sablefish began to decline in April and those of small fish began to decline in July following the normal pattern. However, the decline continued through the early winter months again due to

Figure 1. Tokyo Central Wholesale Market prices for large imported (origin Canada and Alaska) sablefish and Japanese mothership-processed chum salmon for January 1983 through April 1986. (Source of data: Foreign Fishery Information Release)

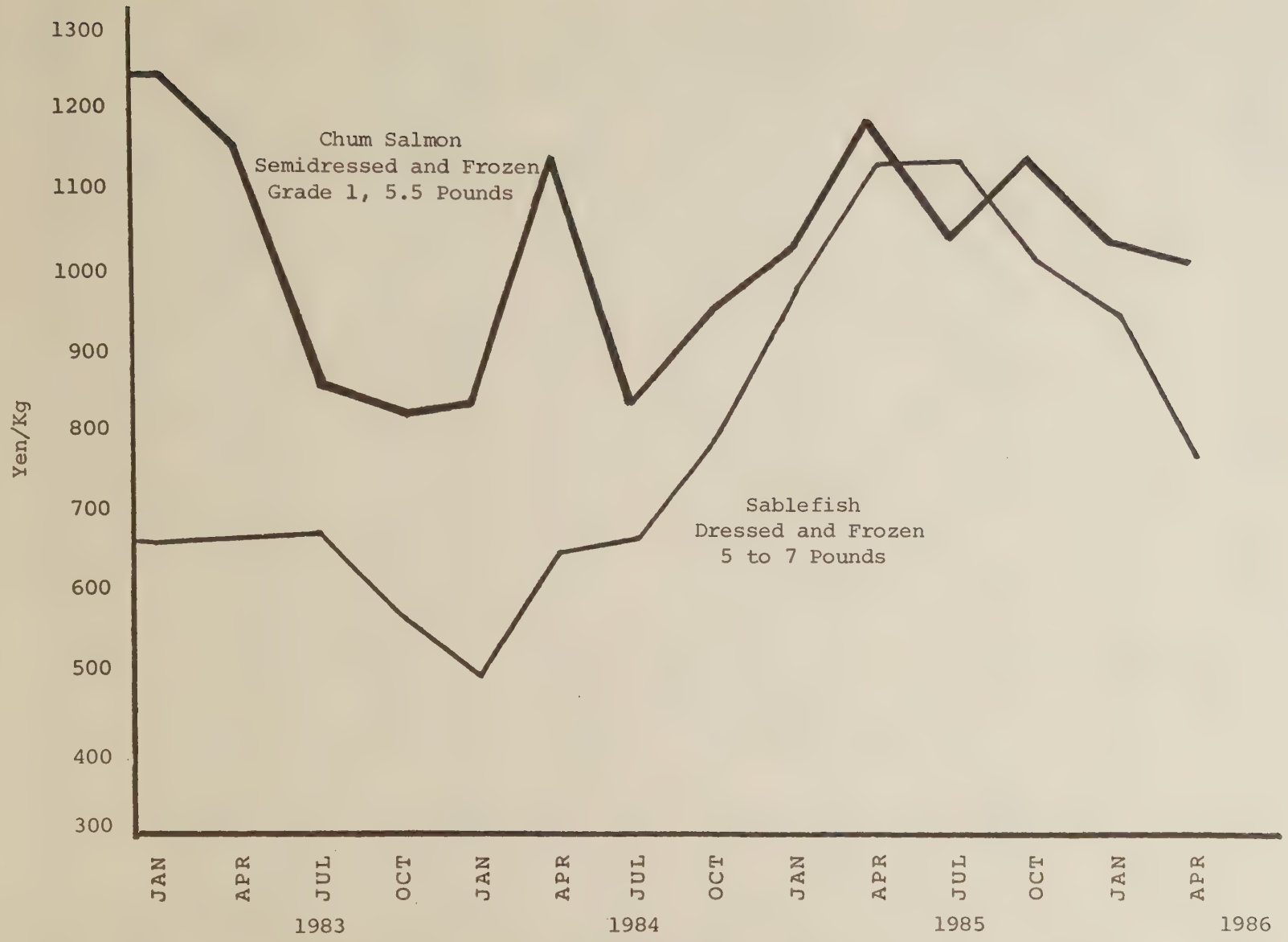

Figure 2. Tokyo Central Wholesale Market prices for small imported (origin Canada and Alaska) sablefish and Japanese mothership-processed chum salmon for January 1983 through April 1986. (Source of data: Foreign Fishery Information Release)

falling salmon prices (Pacific Fishing, 1984a).

January 1984 began the period of supply transition for the market. In that year, Japanese production fell to 2,742 mt due to limitations on fishing in the Gulf of Alaska. The limited supply of domestic fish was almost immediately consumed and demand for imports was strong, resulting in increased prices (Pacific Fishing, 1984b).

During the early part of the year, sablefish prices increased in what appears to be a reaction to rising salmon prices. Beginning in July, however, prices began a period of sustained increase which was fueled largely by efforts of buyers to stockpile an inventory in anticipation of further reductions in catch quotas in 1985. Furthermore, Alaskan production of high quality vessel-processed fish was not sufficient to meet demand which put further upward pressure on prices (H. Beppu and K. Manto, pers. comms.). Added to these factors were a weak yen, which maintained the high cost of imported sablefish, and high salmon prices (Pacific Fishing, 1984c).

Despite warnings by dealers in early 1985 that consumers would resist further price increases, demand remained strong through the traditional winter consumption months (Pacific Fishing, 1985a). Beginning in April, prices stabilized for smaller fish and decreased slightly for larger fish following normal seasonal patterns and also corresponding to a decline in salmon prices. During May and June, Canadian and Alaskan fish were selling for $2.27/lb while the first shipment of Oregon fish was receiving $1.64/lb for 1-2 pound to $1.96/lb for 3-4 pound fish. The reason for the low prices was wariness on the part of importers regarding the quality of the product. In previous years, it was reported, color and freshness of Oregon fish was not up to Japanese standards (Pacific Fishing, 1985b).

By July 1985, according to market reports in Pacific Fishing magazine, 7,500- 8,000 mt of sablefish had been imported and inventories stood at 3,000 mt. With increased inventories and a stable supply of imports, buyers worries about shortages of supply, due to phase out of the Japanese fishery, were alleviated and prices declined through early fall (Pacific Fishing, 1985c).

In the first half of 1986, with Alaskan production well above what it was in the same period in 1985, the Japanese have had a sufficient supply of sablefish to meet demand and to build up inventories. As a result, prices have been falling since January and have declined even further than levels depicted on the graph for April as inventory goals have been met and the fishery in Alaska winds down (H. Beppu and K. Manto, pers. comms.).

While examination of price data can show the general trends which have occurred, a firm understanding of the factors

contributing to the observed price movements can only be accomplished through statistical analysis. Few studies have been conducted which have analyzed the response of the Japanese market to changes in supply and other relevant economic factors. In a study completed in 1982, Jacobson (1982) concluded that the quantity of frozen sablefish available in the Tokyo Central Wholesale Market was not a significant factor in determining the level of sablefish prices, but that chum salmon prices and the level of Japanese national income were significant. The conclusion that changes in quantity have no effect on the level of price is questionable on the basis of supply and demand theory. This result may be due to the fact that he used only average annual data in constructing the model.

As part of a study which investigated the use of market/demand analysis in making allocative decisions in the Alaskan sablefish fishery, Wilson (1984) analyzed monthly data to determine what factors contributed to movements in sablefish prices on the Tokyo Central Wholesale Market. The study looked at two sectors of the market, low grade and high grade. The low grade market was defined as the category corresponding to 11-21 fish per 15 kilogram (kg) box (3.0-1.6 pound fish); the high grade market as that category corresponding to 4-6 fish per 15 kg box (8.3-5.5 pound fish). The explanatory variables which were investigated included the average monthly prices for each category lagged by one month, Japanese Real Gross National Product as an indicator of Japanese income, monthly catch by gear and by country, the Japanese-U.S. exchange rate, and monthly weighted wholesale prices of fall chum salmon.

From this analysis, Wilson concluded that the quantity of sablefish entering the market does affect changes in price and this influence may vary by the type of gear and the market sector. Results indicated that longline and pot catches exerted more influence on the high grade market while trawl catches appeared to influence the low grade market to a larger extent. The model also indicated that the exchange rate and the level of Japanese income are also very important factors in determining price levels. In addition, prices were shown to be "sticky", meaning that the price charged or paid in one period is influenced by what people remember the price was previously.

While these studies give some indication of factors which play a role in determining price levels for sablefish, both were conducted before the market completed its supply transition. Thus, this should be an area of future study when enough data is available to analyze.

2. West Coast Exvessel Prices

With significant increases in wholesale prices occurring over the past two years, the question arises as to what the effect has been on exvessel prices on the west coast. Table 3

shows annual exvessel prices by state and gear from 1981-85. In addition, average exvessel prices for all gears including longline, pot, and trawl are shown in nominal and in real terms using 1972 as the base year. Generally, there has been an upward trend in prices for all gear types. The largest increases occurred from 1984-85. More importantly, examination of real prices shows that 1984-85 was the only period over which average prices showed a significant increase after adjustment for inflation. While statistical analysis is needed to determine what factors are attributable to this increase, it does appear that the rise in wholesale prices in the Japanese market could be having some upward impact on exvessel prices.

Table 3. West coast exvessel prices by gear type and by state for 1981-85.

	1981	1982	1983	1984	1985
	----------Dollars/Lb----------				
Washington					
Longline	0.60	0.77	0.65	0.67	0.92
Pot	0.27	0.32	0.31	0.29	0.71
Trawl	0.18	0.17	0.17	0.16	0.27
Oregon					
Longline	0.33	0.56	0.38	0.37	0.47
Pot	0.26	0.30	0.26	0.24	0.36
Trawl	0.15	0.16	0.18	0.17	0.22
California					
Longline	0.32	0.43	0.51	0.32	0.53
Pot	0.18	0.26	0.33	0.21	0.34
Trawl	0.14	0.15	0.16	0.17	0.20
Average West Coast Prices(1)					
Nominal	0.22	0.26	0.25	0.23	0.39
Real	0.11	0.13	0.12	0.11	0.17

(1) Includes all other gears in addition to longline, pot and trawl

Sources: PacFIN data base
West coast nominal and real prices fromKorson, 1986

Comparison of prices among gear types shows that Washington consistently had the highest longline and pot exvessel prices over the five years. It is speculated that this is due to the fishery being located closer to the concentration of Japanese buyers and also because some of sablefish harvested in Alaskan and Canadian waters are landed in Washington ports (M. Koftner, R. Berg, pers. comms.). With the exception of 1983 and 1985, Oregon longline and pot prices have been higher than California's. The reason for this is not clear. Exvessel trawl prices have been generally stable over the five year period and show the least variability among states.

3. Grading Standards

Differences in exvessel prices discussed above raise questions concerning Japanese value standards for sablefish. For example, on the west coast, longline-caught fish bring the highest prices, but Canadian harvests, 90 percent of which are taken in pots, have received the highest average exvessel prices.

Wholesale prices available from Japan do not shed much light on this problem. Not only, as discussed earlier, may Tokyo Central Wholesale Market prices be inadequately representative of the market as a whole, prices are reported by size categories only. Gear used in harvesting, quality grades, and sometimes geographic origin are not specified.

It is generally accepted that the Japanese prefer larger-sized fish weighing 5 pounds and up. The Tokyo Central Wholesale Market prices bear this out (see Figures 1 and 2). Also, the fact that the 2,000 mt of Japanese inventories at the end of 1985 were exclusively under 4 pounds adds additional supporting evidence.

To go beyond this, one must turn to industry opinion. Attempting to sort out the factors which contribute to quality levels is complicated because of their interrelatedness and because usually it is their combined influence which determines price per pound.

Other than size of fish, those knowledgeable about the Japanese preferences are most concerned with processing methods, gear type,and geographic origin. Distinctions in processing methods are made by time from harvesting to freezing and by butchering practices, with the former apparently having the greater influence on quality. This is thought to explain the high relative price of Canadian-caught sablefish. Most of the Canadian production is frozen onboard the fishing vessels. Smaller vessels, which are not able to carry freezing equipment aboard, deliver catches daily for processing on shore (Anon., 1984). Wilson (1984) reports that Japanese trade journals point to the long intervals between harvesting and on shore processing as the primary reason U.S. sablefish receives consistently lower

prices in comparison to that produced by the Canadian fisheries. According to these journals, sablefish which are not frozen quickly turn a darker color and become rancid. In addition, one U.S. exporter reports that quick-freezing the fish to a core temperature of -10 degrees Centigrade within 4 hours can result in higher prices than if the fish is frozen more slowly.

Regarding butchering methods, the Japanese or eastern cut is preferred over the western cut. With the Japanese cut, the head, pectoral fin, and entire collar bone are removed, but the belly is left intact and the guts are scooped out of the fish. In the western cut, the collar bone is left on the fish and the belly is slit to remove the guts. On the average, the Japanese cut results in about 7 percent more weight loss as compared to the western cut, a factor which should be considered when selecting butchering methods (C. Hummel, pers. comm.). Canadian fishermen have adopted the Japanese cut, but it is difficult to attribute any specified portion of the higher exvessel prices to this one practice. Regardless of the method used, it is very important that the body cavity be cleaned thoroughly. If any guts or blood remain, the price can be reduced by as much as 30 percent (U.S. exporter, confidential comm.).

Differences which the Japanese may perceive between fish caught by the various gears are difficult to pinpoint due to the size selectivity of the different gears. For example, fixed gear (longlines, pots, and set nets) have been shown to harvest larger fish on average than trawls (W. Silverthorne, pers. comm.). Yet, with everything else being equal, there is evidence that the Japanese consider longlines to produce better quality fish than any other method. Written testimony provided to the North Pacific Fisheries Management Council by Japanese buyers has stated that Alaskan longline-caught fish are more marketable in higher valued markets than pot-caught fish from the west coast. According to the testimony, fish taken by pots are often scarred or scratched from close contact with other fish in the pots. An additional quality difference favoring longlines reportedly is that soaking times adversely affect sablefish in pots more than fish on longlines (Wilson, 1984).

West coast sablefish are said to be lower quality than those from other sources mainly because trawling is a predominant harvest method. Pressure exerted on the fish during the towing process apparently damages the flesh. Again, part of the explanation for the lower prices received on the west coast may be that trawling takes smaller-sized fish as compared to other methods. The size factor and the general lack of on-board freezing in the west coast fishery may be more important than harvest method as Japanese trawl-caught fish from Alaska were generally regarded as being of comparable quality to Japanese longline-produced fish (Wilson, 1984).

A final factor to consider is geographic origin. The major

distinction reported in this case is between sablefish taken offthe west coast and those from more northerly waters. West coast sablefish are said to be softer in texture because of the warmer waters. Harvesting the sablefish during the time of spawning also may contribute to this problem (S. Tobata, pers. comm.). Confirmation of the softer texture of west coast sablefish was made by a major U.S. exporter who added that the skin of Alaskan sablefish also is darker in color.

III. Conclusion

Japanese imports of sablefish have grown significantly each year since 1983. In 1986, it is projected that 18,000 or more metric tons of dressed product will be imported. This is a substantial increase over 1984 import levels, but is well below the estimated market demand of 40,000 to 50,000 mt in 1979.

The market is still in a period of adjustment making forecasting of future trends difficult. In 1986, rapid expansion of the Alaskan fishery led to falling prices. Under present market conditions, buyers are wary of oversupplying demand. Consumer reaction during the coming winter months should give an indication of next season's buying levels. If present inventory levels prove insufficient, Japanese buyers will likely increase purchases during the 1987 fishing season.

West coast producers are at some disadvantage at this point. The Canadians have already established their product in the Japanese market. The Alaskan fishery is rapidly expanding and vessel owners are making serious efforts at producing a high quality product for the Japanese market. If west coast fishermen are to gain a footing in the Japanese market, priority must be given to improving the level of quality of west coast products. With Canadian and Alaskan fishermen favoring onboard processing, clearly west coast fishermen must go the same route. Installing onboard freezers is the most important step in this direction. Adopting butchering methods preferred by the Japanese should also be taken into consideration, however, the producer should evaluate the increased value of the product against the costs involved.

Given the preference of the Japanese market for larger higher-valued fish, size selectivity should be considered. While longline and pot gear are the most direct means of selecting for larger fish, trawl gear may be used more effectively by targeting areas where larger fish are found. Also, making shorter tows could reduce the amount of damage to the fish thus improving its quality.

The last factor, that of geographic origin, is the most difficult one to overcome. Improving overall quality of west coast product may diminish some of the distinctions made in this area, although even the best west coast product will not bring

the same price as premium quality Alaskan and Canadian sablefish.

More study of the Japanese market is clearly needed, especially in areas which would improve the capability of the west coast fishing industry to predict price movements in the market. However, because the market is still in a state of adjustment, any conclusions drawn from studies of the market in its present state would likely not have any long term validity. The problem of warm water effects on flesh texture is one area in which current research could be of immediate value.

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